HRQ-S90

INFRARED THERMOMETER FOR ANIMAL

Execution Standard: Q/ZHD 001-2008

User Manual

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Cautions for use of laser:

This temperature measurement gun has the function of laser indication.

When using, please note the following requirements:

1. Never shoot anyone’s eyes directly with the laser.
2. Never use any optical instrument like telescope, etc. to view the laser beam.
3. The laser’s average power is 0.65 mw, and its maximum power will not be more than 1 mw.
4. There is a label indicating permanent use of the laser on the product.

I. Brief Introduction to the Product

HRQ-S90 NON-CONTACTING INFRARED THERMOMETER FOR ANIMAL, adopts the up-to-date infrared detecting technology, is developed by combining animal’s physiological parameter, with the features of easy operation, reliable design, compact structure, higher measuring accuracy, freeing from disturbing, etc. Only through taking aim and pressing the key, the surface temperature of the measured animal can be read within one second, at the same time, this product can also measure ambient temperature and humidity. It is widely used in animal husbandry, hygiene and disease control department, disease inspection bureaus, slaughter house, animal hospital, livestock transport department.

II. Operational Principle:

The Infrared Thermometer for Animal (NON-CONTACTING), based on The Principle of Planck's Constant Measurement, can accurately display animal's body temperature through

measuring the shell temperature of animal in certain position and make a correction of temperature difference between shell temperature and actual temperature.

III. Product Features:

1. The first thermometer specially designed for animal through infrared measurement in the world, a revolution in measuring animal body temperature, and a replacement of measuring animal body temperature through rectum in the past;
2. The first adopting advanced infrared detecting technology with high accuracy, cleanness and swiftness;
3. Laser hairline pointer inside;
4. The resolution is 0.1;
5. Measured value automatically retention;
6. Sound alert for higher body temperature (adjustable);
7. Keep 32 measured values record
8. Large LCD display with backlighting;
9. D: S=50:1;
10. Automatic shut down for saving electricity.

IV. Basic Components and External Form (see the figure below)

1. Infrared transducer window
2. Laser sights
3. Display screen
4. Configuration keyboard
5. Handle
6. Testing key
7. Battery panel

V. Display Symbols

A.

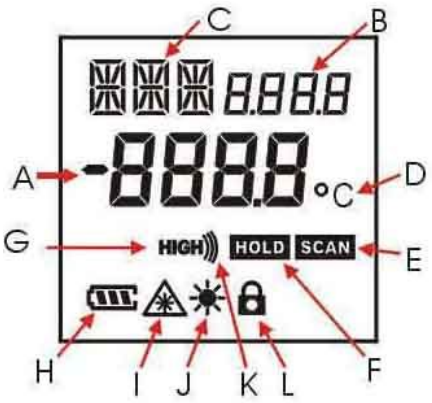
- Measurement results display
- Historical records display

B.

- Ambient-temp
- Historical record index No. display

C.

- Humidity display
- Setting code display



D. Temperature unit indicator

E. Read data indicator

F. Hold data indicator

G. Beyond range indicator

H. Battery indicator, indicate power not enough

I. Laser beam indicator

J. LCD backlight indicator

K. Sound indicator

L. Enter into historical record indicator

VI. Specifications for Buttons

Four function buttons: "⊕", "⊖", "SET", "MEM".

Symbol		Specifications for symbol function
⊕	Function button	Used to increase values in setting mode and turn pages from front to end in checking historical records
		After measuring, press this button to keep the result in historical record

⊖	Function button	Used to decrease values in setting mode and turn pages from end to front in checking historical records
SET	Function button	Used to set functions, press and hold 2 seconds enter into setting mode
MEM	Function button	Enter into historical record mode
		Save changes in setting

VII. Settings

Press and hold "**SET**" button 2 seconds enter into setting mode, then each time press the "**SET**" button the LCD screen will display orderly **F-1→F-2→F-3→**exit setting mode.

1. Function setting F-1: Setting of fever alarm threshold. To set the lower limit of alarm for temperature measurement. There will be a fever alarm and enable characters "HIGH", when the temperature reach or higher than this setting value. The fever alarm threshold ranges from 35.0℃ to 43.0℃ for selection and adjustment, and its factory default value is 39.5℃.

1) After the **SET** button is pressed and held for 2 seconds, the LCD screen will display **F-1** and enable characters "39.5℃" to flash.

2) Now the alarm threshold will be increased by 0.1℃ when the ⊕ button is pressed each time.

3) Meanwhile, the alarm threshold will be decreased by 0.1℃ when the ⊖ button is pressed each time.

4) After the selection, press the **MEM** button to save the setting parameters and press **SET** button to go to the function setting **F-2**.

2. Function setting F-2: Setting of overall offset

1) After the **SET** button is pressed and held for 2 seconds, the LCD screen will display **F-1**, press the **SET** button once more to display **F-2** and enable the characters "0.0" to flash.

2) Now the offset value will be increased by 0.1℃ when the ⊕ button is pressed each time.

3) Meanwhile, the offset value will be decreased by 0.1℃ when the ⊖ button is pressed each time.

4) After the selection, press the **MEM** button to save the setting parameters and press **SET** button to go to the function setting **F-3**.

Note: The actual value of temperature measurement is adjusted with the offset ranging from -3.0℃ to +3.0℃ according to the actual measurement distance and environment. For example, the measurement result of an animal's body temperature is 38.5℃, but the actual body temperature of the animal is 39.3℃. In this case, the correct temperature value of 39.3℃ can be achieved through adjustment 0.0℃ to 0.8℃ with the offset by pressing ⊕ in **F-2** mode. Meanwhile, if the measurement result of an animal's body temperature is 38.5 ℃, but the actual body temperature of the animal is 38.0℃, the correct temperature value of 38.0℃ can be achieved through adjustment 0.0℃to -0.5℃ with the offset by pressing ⊖ in **F-2** mode. (When the offset is negative, the correct result is the measurement value minus this value. When the offset is positive, the correct result is the measurement value plus this value. When the offset is 0.0, the correct result is the measurement value.)

3. Function setting F-3: Laser-beam switch mode

1) After the setting button is pressed and held for 2 seconds, the LCD screen will display **F-1**, press the **SET** button for twice more to display **F-3** and enable characters "YES" to flash.

2) Now press the ⊕ button to display "YES", i.e., switching on the laser-beam function.

3) Or press the ⊖ button to display "No", i.e., switching off the laser-beam function.

4) After the selection, press the **MEM** button to save the setting parameters and press **SET** button to exit the setting function.

4. Exiting the setting mode

1) When setting the function parameters, continuously press the **SET** button to exit the setting function.

2) When no button is pressed (no operation) for 12 seconds, it will exit the setting function automatically.

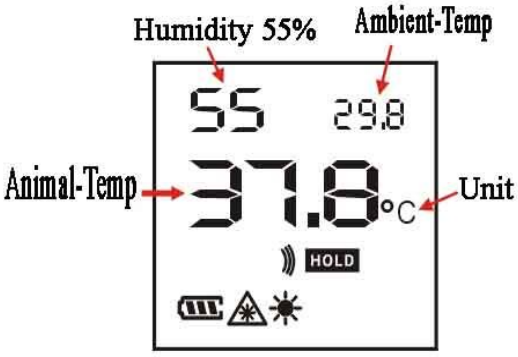
5. Changing the batteries

Display: when the battery symbol flashes on the LCD screen, it indicates the batteries are low.

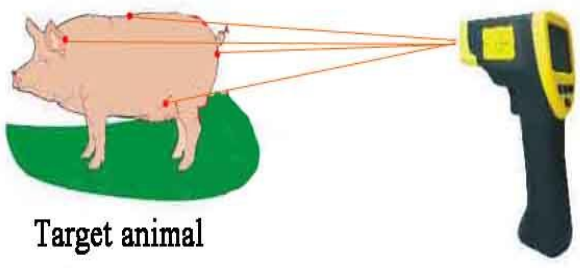
Operation: open the battery cover and change the old batteries with new 9V alkali batteries.

VIII. Method of Use

- In order to get a more accurate measurement value of body temperature, before measuring, the thermometer shall be put aside for 30 minutes after installation of batteries or when it is moved to a new environment (new place).
- Align the detection window with the surface of the animal within 100cm from the surface of the animal, and then press the measurement button in front of the handle. Just 1 second, the thermometer will start up automatically and display the measurement result, as shown in the figure below:



- When press the measurement button, characters “SCAN” will be display at the bottom of right. When release the measurement button, the screen will display characters “HOLD” which means the measured value has been automatically retention. When no operation the thermometer will shutoff automatically approx 10 seconds.
- Every time press the measurement button can get the animal-temp, the ambient-temp and humidity.
- **Detail Operation:** to aim at the following positions of the animal, and press the measurement button, the actual temperature of the animal will be displayed in the LCD screen. Such as:



Pig: basal part of the ears (neck); base of tail; post abdomen; back.

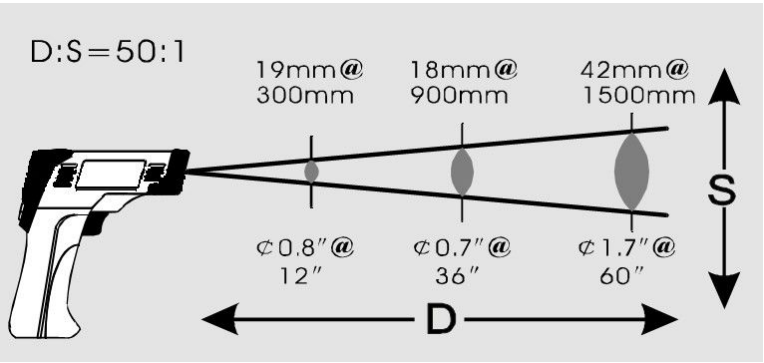
Cattle and sheep: mouth; inner side of the thigh.

Dog: inner side of the thigh.

Fowl: mouth; below the wing of the fowl

Note:

- During using, it can set the fever alarm threshold and overall offset value according to needs. There will be a fever alarm, when the temperature measured is reached or higher than the fever alarm threshold.
- Beyond measuring cue: the LCD screen will display “Lo” when the animal’s temperature below 35℃, while the LCD screen will display “Hi” if the animal’s temperature over 43℃, then can turn to measure other parts of the body.
- Do not measure animal through transparent object, such as: glass or plastic, otherwise, the result measured is just the surface temperature of the transparent object.
- Steam, dust, smoke or other particles may form barrier about the lens, and effect the accuracy of measurement.
- When measuring, just point the infrared transducer window to the animal and press the button, note that the ratio between distance and scope.
- Distance and scope: measuring scope will be larger when the measuring distance turns to be larger. As shown in the figure below:



- Range of observation: according to the figure, the smaller of the target the nearer of the distance should be, make sure the target measured must be larger than the measuring scope of this machine.
- Wet parts will cause the temperature lower, so make the dry parts as standard.

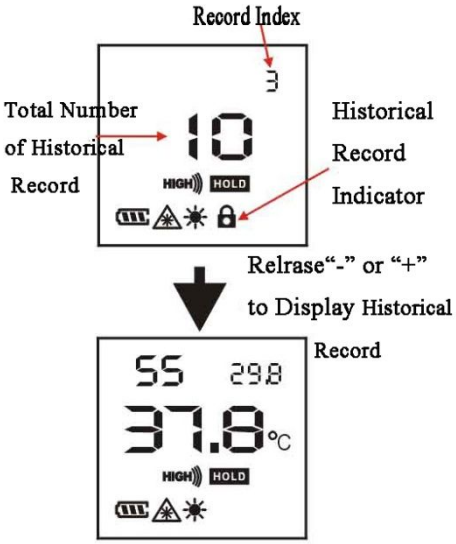
IX. Store and Check Record

1) Method of keeping record.

After measuring, press ⊕ button to keep the result in historical record, at the same time, there will be flash at the bottom of right and with a beep.

2) Check the result in historical record.

In regular state, press **MEM** button to enter into historical record mode, the LCD screen will display historical record, and press ⊕ button to turn pages from front to end in historical record, and press ⊖ button to turn pages from end to front. Press "**MEM**" again can exit checking mode. As shown in the figure below:



3) Historical record can store 32 measured values.

X. Safe Guard Requirement

Cautions after laser beam opened:

Avoid aiming at eyes of man and animal with laser beam;

Avoid aiming at reflecting objects with the laser beam which can reflect to man's eyes;

Avoid aiming at any easily explosive gas with laser beam.

XI. Cautions

1) The protective lens of probe is the most damageable part of the infrared thermometer. Hence, it must be taken good care.

2) Cleaning method of probe lens: Use the cotton bud or soft cloth with water or alcohol to wipe the lens lightly.

3) Never charge the batteries or throw any of them into fire. Please discard the used batteries at a specified location for recycle. Using the batteries with a bad quality may cause fire or explosion.

4) Caution: the batteries shall be removed, if the product is without using for long time.

5) The product may not be immersed into water or exposed to the sun directly.

6) Never hard throw or impact the product. Otherwise, it will be damaged.

7) If the measurement is made without an effective distance or an alignment with the central position of the measured object, a deviation from actual temperature may be caused. It is suggested to repeat the measurement once or more.

XII. Quality Commitment and After-sales Service

The product is under warranty for one year from the date of purchase.

Caution: Damage caused by improper use or disassembly by user is not covered under warranty.

Note: please take good care of your warranty card and purchase bill for application of repair in case of damage.

XIII. List of Accessories

A user manual.

A warranty card and a quality certificate.

One 9V alkali battery

XIV. Product Parameter:

infrared thermometer	HRQ-S90	Ambient temp	0.0~50.0°C
Temperature range	35°C~43°C / 95°F~109.4°F	Backlight	backlight LCD
Accuracy	±0.4°C	Product dimension	154*59*181mm
Distance scope ratio	50:1	Weight	252g
Operation temperature	0.0°C~50°C	measured values retention	32
Humidity range	20%~95%	Humidity accuracy	±5%
Emissivity	0.95μm	Power Supply	9V alkali battery
Resolution	0.1°C	Response time	≤0.5 sec
Spectral response	5~13μm	Laser Target Location function	effective
Sound alert for higher body temperature	effective	Auto Shutdown time	10s

XV. Product Available Services:

ODM service

OEM service

1) Color of the product can be changed

2) Private color box and instruction are available

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